

-21-

WHAT IS CLAIMED IS:

1. A self-contained popcorn popper for use in an area and said popper comprising a cabinet, a popcorn popping kettle within the cabinet, a popped popcorn bin for receiving popped popcorn from the kettle within the cabinet, said popper further comprising:

a filter passage having an inlet within the cabinet and proximate said kettle;

a plurality of filtration stations within the filter passage for removing particulates from a vapor effluent issuing from the popping of popcorn in said kettle; and

a blower for sucking vapor effluent into said inlet and through said passage discharging filtered effluent into said area.

-22-

2. A popper as in claim 1 wherein said filtered effluent discharging from said blower contains less than 5 milligrams of particulates per cubic meter of effluent discharged.
3. A popper as in claim 2 wherein said inlet, passage and blower are contained in said cabinet.
4. A popper as in claim 3 wherein said blower includes an effluent outlet discharging into said cabinet and said effluent being vented outwardly of said cabinet into said area.
5. A popper as in claim 4 wherein said inlet is located in an upper portion of said cabinet and such blower is located in a lower portion of said cabinet.
6. A popper as in claim 3 wherein said cabinet has two sides which are each open for operator access therein.
7. A popper as in claim 1 wherein said cabinet has two sides which are each open for operator access therein.
8. A popper as in claim 1 wherein said inlet comprises a vapor oil baffle.

-23-

9. A popper as in claim 8 wherein said filter station comprises first and second filters, sequentially disposed in said passage downstream of said baffle, a first filter filtering salt and grease particulates from said effluent after passage thereof past said baffle and said second filter filtering smoke particulates from said effluent downstream of said first filter.
10. A popper as in claim 9 wherein said blower moves effluent through said passage at a velocity of less than 500 feet per minute.

-24-

11. A popcorn popper having a cabinet with a popcorn popping kettle in said cabinet,
a filter passage with an inlet in an upper portion of said cabinet proximate said kettle,
a plurality of filtration stations in said passage, and
a blower in a lower portion of said cabinet operably coupled to said passage for sucking
vapor effluent from said kettle into said inlet and through said filtration stations,
said blower having a discharge outlet for discharging filtered vapor effluent from said
cabinet.

-25-

12. A popper as in claim 11 wherein said passage comprises a vertical run above said blower and wherein two filtration stations are disposed in said vertical run.
13. A popper as in claim 12 wherein said passage inlet comprises a vapor oil separating baffle for receiving oil laden vapor and separating therefrom oil therein.
14. A popper as in claim 13 wherein a first filtration station downstream of said baffle in said passage comprises a particular filter for removing grease and salt particles from said effluent.
15. A popper as in claim 14 wherein a second filtration station downstream of said first filtration station in said passage comprises a filter for removing smoke components from said effluent.
16. A popper as in claim 15 wherein effluent discharged from said blower contains no more than five milligrams per cubic meter of particulates discharged from said blower.
17. A popper as in claim 16 wherein the velocity of vapor effluent in said passage is below 500 feet per minute.

-26-

18. A popper as in claim 11 further including at least one effluent pressure sensor in said passage for sensing pressure changes and for signaling an efficiently reduction in at least one of said filtration stations as a function of pressure change in said effluent.

19. A popper as in claim 11 wherein said kettle has a lid and further including an oil baffle in said lid, said baffle being open for selective passage of a fire suppressant agent into said kettle.

-27-

20. A popcorn pass-through popcorn popper having a cabinet with two open sides providing access to a popcorn receiving area, said popper having a vapor effluent treating passage for filtering vapors from a popping operation and for discharging filtered effluent into the environment in which said popper is located, and wherein said popper further comprises:

an effluent passage;

a passage inlet disposed in an upper portion of said cabinet;

a plurality of filtering stations in said passage;

a blower for sucking effluent into said inlet and through said passage, and

said blower being disposed in a lower portion of said cabinet.

-28-

21. A popper as in claim 20 wherein said passage and blower are disposed within said cabinet.
22. A popper as in claim 21 wherein said blower has an outlet disposed for discharging effluent from said passage onto said cabinet.
23. A popper as in claim 22 wherein said blower outlet discharges effluent having less than 5 milligrams of particulate per cubic meter of effluent discharged.

-29-

24. A popcorn popper comprising a cabinet and having a popping kettle and a bin in the cabinet for receiving popped popcorn from said kettle, said popper further comprising:

open sides on each side of said cabinet providing access to at least said bin;

a filtration passage for receiving effluent including vapors from the popping of said popcorn;

said passage having an inlet in an upper position of said cabinet at a level above said bin;

a plurality of filtration stations in said passage for filtering oil, particulates and smoke components from said effluent; and

a blower disposed in a lower portion of said cabinet at a level below said bin for sucking effluent into said passage and discharging filtered effluent.

-30-

25. A popper as in claim 24 wherein said passage and blower are disposed within said cabinet.

26. A popper as in claim 25 wherein said blower has an outlet within said cabinet for discharging effluent from said passage into said cabinet.

-31-

27. A method of popping popcorn and filtering oil-laden vapor and steam from effluent produced during said popping including the steps of:

popping popcorn in a kettle within a popper cabinet disposed in an area;

sucking effluent produced by said popping step into an inlet of a filtration passage;

separating oil from said effluent as it enters said inlet;

separating grease and salt particles from said effluent in said passage downstream of said baffle;

separating smoke components from said effluent downstream of said grease and salt separating step; and

discharging effluent downstream of said smoke component separating step into the area in which the cabinet is located.

-32-

28. A method as in claim 27 wherein said discharging step includes discharging effluent containing less than 5 milligrams of particulates per cubic centimeter discharged.
29. A method as in claim 27 wherein said separation steps are carried out within said cabinet.
30. A method as in claim 29 wherein said discharging step includes discharging effluent into said cabinet.
31. A method as in claim 27 further including monitoring the status of apparatus carrying out at least one of said separating steps and indicating deterioration of separation efficiency of said at least one separating step.